

### **REMARKS**

Claims 1, 3-5, 9-32 and 34-66 are pending in the above-captioned patent application after this amendment. Claims 1, 3-5, 9-32 and 34-55 and 61-66 have allowed and claims 56-60 have been rejected.

The Applicant respectfully disagrees with and traverses the rejection of claims 56-60. Reconsideration of the pending application is respectfully requested in view of the arguments set forth below.

### **Interview Summary**

On October 19, 2007 the undersigned attorney for the applicant conducted a telephonic interview with the Examiner, Tran Nguyen. During the interview, the rejection of claims 56-60 was discussed. More specifically, during the interview, the Examiner agreed that the 35 U.S.C. §102(b) rejection of claims 56-60 as being anticipated by U.S. Patent No. 6,313,556 issued to Dombrovski et al. ("Dombrovski et al.") was incorrect and would be withdrawn. The Examiner stated that another search may be necessary before making a final determination regarding the allowability of claims 56-60. The applicant wants to thank the Examiner for her assistance during the interview.

### **Rejections Under 35 U.S.C. §102(b)**

#### **Claims 56-60**

Claims 56-60 are rejected under 35 U.S.C. §102(b), as being anticipated by U.S. Patent No. 6,313,556 issued to Dombrovski et al. ("Dombrovski et al."). The Applicant respectfully submits that the rejection of claim 56, as amended, is unsupported by the art and should be withdrawn.

More particularly, the Examiner contends that Dombrovski et al. teaches in Figure 1, a mover including an outer surface, a magnet component (52) and a conductor component (72), wherein the conductor component has a first passageway (76, 78) and a second passageway (44) that is at least partially encircled by the first passageway; and a circulation system (16, 20) comprising a fluid source that directs a first fluid to the first passageway and a second fluid to the second passageway, wherein the fluid source controls the temperature and flow of the second fluid so that the second fluid is

approximately boiling at the inlet (the cryogenic fluid used in this system would inherently be boiling at least during the initial operation of the device). The Examiner further contends that Dombrovski et al. teaches additional features as claimed in the present invention.

The Applicant provides that Dombrovski et al. is directed to a superconducting electromechanical rotating (SER) device 10 including: a rotor 14; a cryogenic refrigeration system 16 which cools the windings of the rotor 14; a stator 18 that coaxially surrounds the rotor 14 and drives the rotor 14 to rotate upon receiving an excitation current; a water cooler 20; and a power source 22. The rotor 14 includes a rotor winding 52, which is cooled by the cryogenic fluid so as to be rendered superconductive; a coil support structure 56; and a vacuum jacket 54, which thermally insulates them from the environment. The cryogenic refrigeration system 16 is linked to the interior of the rotor 14 via respective supply and return conduits 44 and 46. The refrigerant supplied by the cryogenic refrigeration system 16 may be any suitable cryogenic fluid such as gaseous helium, liquid nitrogen, liquid neon, or liquid oxygen, which is pumped through the coil support structure 56 via the supply and return conduits 44 and 46 to cool the rotor winding 52.

The stator 18 includes a stator winding 72 and a support structure 74, wherein the stator winding 72 is formed from a plurality of coils 100 that are potted to an inner radial surface of the support structure 74 and possibly to end caps 26, 28, so that the coils 100 are fixed in place relative to the support structure 74 and the end caps 26, 28. The stator 18 is cooled by circulating a liquid coolant such as water through the stator 18 in a closed loop via supply and return conduits 76 and 78 extending between the water cooler 20 and the stator 18. The water cooler 20 may comprise an assembly which is capable of drawing heated water away from the stator 18 via the return conduit 78, cooling the heated water to a temperature, for example, near, at or below ambient temperature, and returning the cooled water to the stator 18 via the supply conduit 76. (Dombrovski et al. Abstract, column 1, lines 24-40, column 2, lines 37-53, column 4, line 17 through column 5, line 49, column 6, lines 34-42, column 7, lines 16-35, and column 8, line 66 through column 9, line 7, and in Figure 1).

However, the Applicant contends that Dombrovski et al. does not disclose a mover

combination including a mover having a magnet component and a conductor component that is movable relative to the magnet component, wherein the conductor component has a first passageway and a second passageway that is at least partly encircled by the first passageway; and a circulation system having a fluid source that controls the temperature and flow of a second fluid so that the second fluid is approximately boiling at an inlet to the second passageway. Dombrovski et al. teaches the stator 18 driving the rotor 14 so that the rotor 14 rotates relative to the stator 18. As noted by the Examiner, the rotor 14, with rotor winding 52, makes up the magnet component, while the stator 18, with stator winding 72, makes up the conductor component. Accordingly, Dombrovski et al. teaches the magnet component (the rotor 14) being movable relative to the conductor component (the stator 18), whereas claim 56 of the present application requires that the conductor component be movable relative to the magnet component.

Further, the SER device 10 in Dombrovski et al. includes a first passageway (supply and return conduits 76 and 78) that at least partly encircles a portion of a second passageway (supply and return conduits 44 and 46). However, the Applicant respectfully contends that in Dombrovski et al., the first passageway (76, 78) is positioned within the stator 18, whereas the second passageway (44, 46) is positioned within the rotor 14. Accordingly, Dombrovski et al. does not disclose the conductor component having a first passageway and a second passageway, wherein the second passageway is at least partly encircled by the first passageway.

Moreover, Dombrovski et al. does not disclose a circulation system which controls the second fluid to be approximately boiling at the inlet. While the Applicant concedes that Dombrovski et al. teaches the use of a cryogenic fluid for cooling the windings of the rotor 14, this does not necessarily lead to or support the position of the Patent Office that the cryogenic fluid would inherently be boiling (at an inlet to the second passageway) at least during the initial operation of the device.

In distinction to Dombrovski et al., amended claim 56 is directed to a "mover combination comprising: a mover including an outer surface, a magnet component and a conductor component that is movable relative to the magnet component, wherein the conductor component has a first passageway and a second passageway that is at least partly encircled by the first passageway; and a circulation system comprising a fluid

source that directs a first fluid to the first passageway and a second fluid to the second passageway through an inlet to the second passageway, wherein the fluid source controls the temperature and flow of the second fluid so that the second fluid is approximately boiling at the inlet."

Because Dombrovski et al. does not disclose all of the elements of amended claim 56, the §102(b) rejection of amended claim 56 is unsupported by the art and should be withdrawn. Because claims 57-60 depend directly upon amended claim 56, the rejection of claims 57-60 under 35 U.S.C. §102(b) is also unsupported by the art and should be withdrawn.

#### Conclusion

In conclusion, the Applicant respectfully asserts that claims 1, 3-5, 9-32 and 34-66 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-456-1951 for any reason that would advance the instant application to issue.

Dated this 19<sup>th</sup> day of October, 2007.

Respectfully submitted,



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STEVEN G. ROEDER  
Attorney for Applicant  
Registration No. 37,227  
THE LAW OFFICE OF STEVEN G. ROEDER  
5560 Chelsea Avenue  
La Jolla, California 92037  
Telephone: (858) 456-1951